

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A transmitter comprising:

an input-side digital multi-port directional Butler matrix coupler configured to divide and combine digital transmission signals of N channels by digital processing and configured to output N-combined signals to N transmission paths, respectively;

N predistorters inserted in said N transmission paths, respectively, configured to provide compensating predistortions to the N-combined signals outputted from said input-side digital multi-port directional coupler;

N transmitting parts inserted in said N transmission paths, respectively, configured to convert output signals from said N predistorters to N high-frequency signals, each of said N transmitting parts including a power amplifier for amplifying power of the high-frequency signal;

an output-side multi-port Butler matrix directional coupler ~~power combiner~~ configured to divide and combine said N high-frequency signals to output N high-frequency transmission signals; and

N receiving parts configured to extract, from said N high-frequency signals, distortion components produced by the power amplifiers and configured to generate, based on said distortion components, compensating signals which control said N predistorters, wherein

based on said compensating signals, said N predistorters generate compensating predistortions and impart said compensating predistortions to said N-combined signals from said input-side digital multi-port directional coupler, respectively, to cancel the distortion components at said power amplifiers.

Claim 2 (Canceled).

Claim 3 (Previously Presented): The transmitter of claim 1, wherein said N predistorters are digital predistorters configured to impart said compensating predistortions to said N-combined signals from said input-side digital multi-port directional coupler by digital processing, and which further comprises:

N digital-to-analog converters inserted in said N transmission paths configured to convert the outputs from said N predistorters to analog signals and configured to apply said analog signals to said N transmitting parts, respectively; and

N analog-to-digital converters configured to convert said compensating signals from said N receiving parts to digital compensating signals and configured to apply said N digital compensating signals to said N digital predistorters.

Claim 4 (Previously Presented): The transmitter of claim 1, wherein said N predistorters are analog predistorters, and which further comprises N digital-to-analog converters inserted in said N transmission paths configured to convert said N-combined signals output from said input side digital multi-port directional coupler to analog signals for application to said N analog predistorters, said N receiving parts providing said compensating signals to said N analog predistorters.

Claim 5 (Previously Presented): The transmitter of claim 3 or 4, wherein each of said N transmitting parts includes:

an up-converting part configured to up-convert the corresponding one of said N analog signals to a high-frequency signal of the transmission frequency band; and

the power amplifier configured to amplify the power of said high-frequency signal and configured to apply said power-amplified high-frequency signal to said output side multi-port directional coupler.

Claim 6 (Previously Presented): The transmitter of claim 3 or 4, wherein each of said N receiving parts includes:

- a detecting part configured to detect the corresponding one of said high-frequency signals of said N transmission paths;
- a band-pass filter configured to extract a distortion component by said power amplifier from said detected output; and
- a control part configured to generate said compensating signal based on said distortion component.